What is claimed is:

1. A method for the removal of scale from equipment on which scale has accumulated which comprises treating the equipment surfaces having scale with a solution having a scale-removing effective amount of a sodium salt of a polycarboxylic acid chelating agent.

2. The method of claim 1 wherein the chelating agent is tetrasodium ethylenediaminetetraacetic acid or pentasodium diethylenetriamine-pentaacetic acid.

3. The method of claim 2 wherein the chelating agent is tetrasodium ethylenediaminetetraacetic acid.

4. The method of claim 1 wherein the scale contains at least one component selected from the group of calcium phosphate, calcium carbonate, silicic acid, calcium silicates, calcium oxalates, iron and aluminum silicates, calcium oxalate, calcium- or silica-containing minerals, proteins, amino acids, waxes and lipids, cellulose and hemi-cellulose.

5. The method of claim 1 wherein the concentration of the chelating agent is from about 3 to about 100 g/L.

6. The method of claim 5 wherein the concentration of the chelating agent is from about 25 to about 75 g/L.

7. The method of claim 6 wherein the concentration of the chelating agent is from about 55 to about 70 g/L.

8. The method of claim 1 wherein the pH of the chelate solution is about 7 to about 12.

9. The method of claim 9 wherein the pH is from about 9.0-10.0.

10. The method of claim 8 wherein sodium hydroxide is added to maintain the pH.

11. The method of claim 1 wherein the temperature of the solution during the scale-removing process is from about 20°C to about 120°C.

12. The method of claim 11 wherein the temperature is from about 50°C to about 110°C.

13. The method of claim 12 wherein the temperature is about 100°C to about 102°C.

14. The method of claim 1 wherein the chelating agent is tetrasodium ethylenediaminetetraacetic acid having a concentration of from about 55 to about 70 g/L.

15. A method for the removal of hard-to-remove scale from an evaporator apparatus which comprises treating the evaporator surfaces having scale with a solution having a scale-removing effective amount of a combination of a sodium salt of a polycarboxylic acid chelating agent, caustic and at least one of an additional compound effective in removing hard scale.

16. The method of claim 15 wherein the chelating agent is tetrasodium ethylenediaminetetraacetic acid or pentasodium diethylenetriamine-pentaacetic acid.

17. The method of claim 16 wherein the chelating agent is tetrasodium ethylenediaminetetraacetic acid.

18. The method of claim 17 wherein the additional compound effective in removing scale is selected from the group consisting of a fluoride, gluconic acid or sodium acid sulfate.

19. The method of claim 18 wherein the fluoride is selected from the group of ammonium bifluoride and sodium fluoride.

20. The method of claim 19 wherein the fluoride is sodium fluoride.

21. The method of claim 15 wherein the caustic is sodium hydroxide.